MERCER
Investment Consulting

December 15, 2006

# Total Fund Review – Third Quarter Board Meeting
# Arizona State Retirement System

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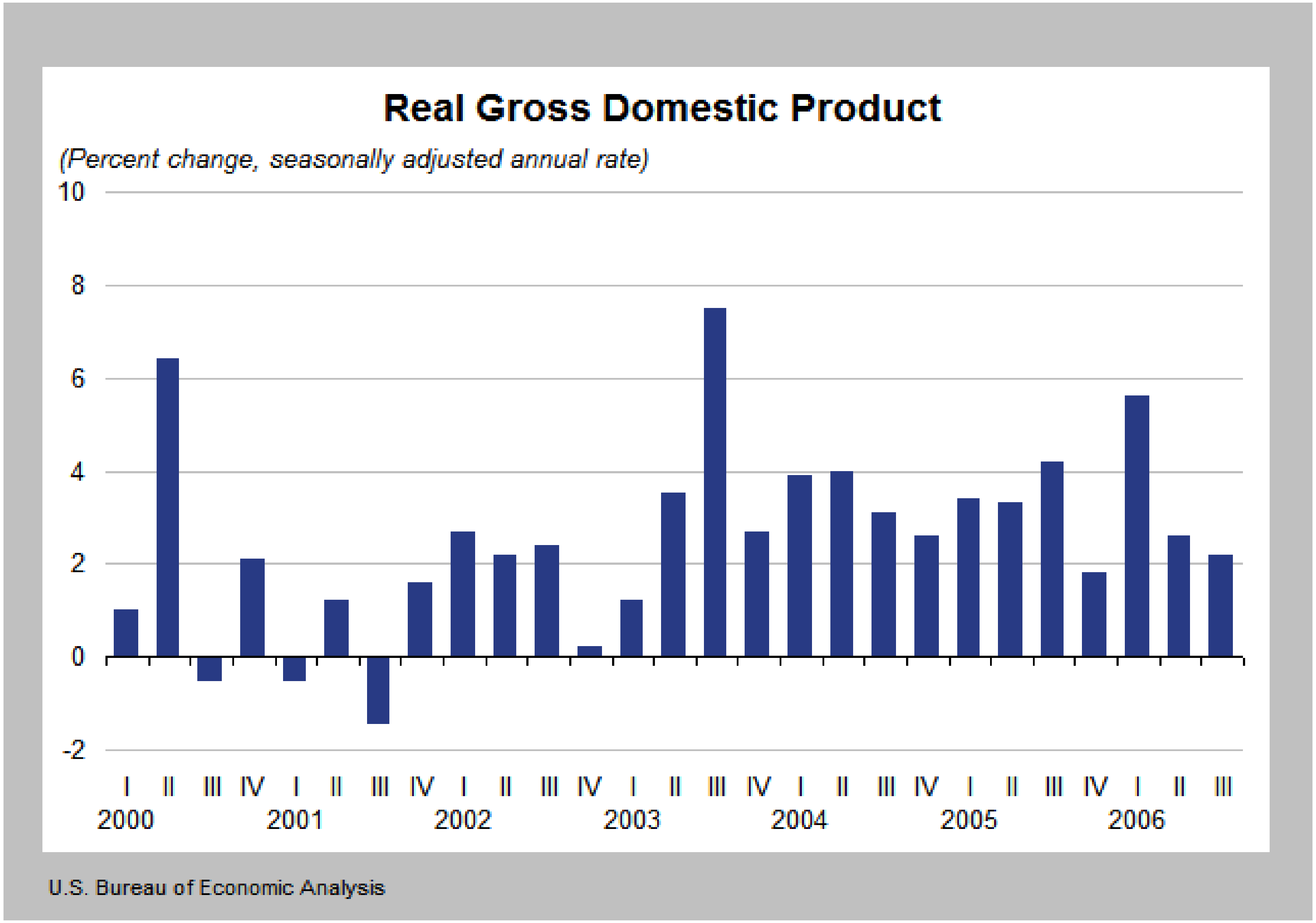
# Economic Environment

# Possible Economic Slowdown
## Decline in the Housing Market Is Very Visible

- The economy expanded at a slower pace during the quarter as the steadily weakening housing sector and peaking energy prices hampered growth. The revised government estimate of third quarter GDP growth was 2.2%.
- Payroll reports showed slower but steady job growth, as employers added 350,000 jobs during the quarter. The unemployment rate at September-end was 4.6%.
- After sinking to a nine-month low in August, consumer confidence rebounded in September due primarily to falling gasoline prices. Consumer spending remained fairly healthy despite the slumping housing market, increasing at an inflation-adjusted annual rate of 3%.
- The housing market continued to trend downward as existing-home sales fell for the fifth consecutive month in August and the national median price fell year-over-year for the first time in 11 years. The average rate on the 30-year fixed-rate mortgage was 6.31% at quarter-end, down from 6.78% in June.

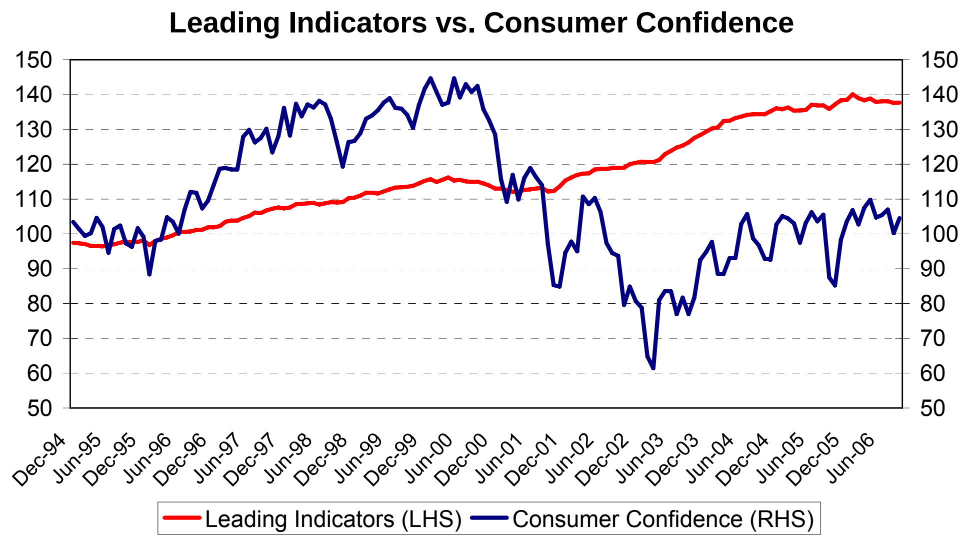
# Growth Continues to Slow
## Future Direction Depends on Balance of Conflicting Forces



# Growth Continues to Slow
# Future Direction Depends on Balance of Conflicting Forces

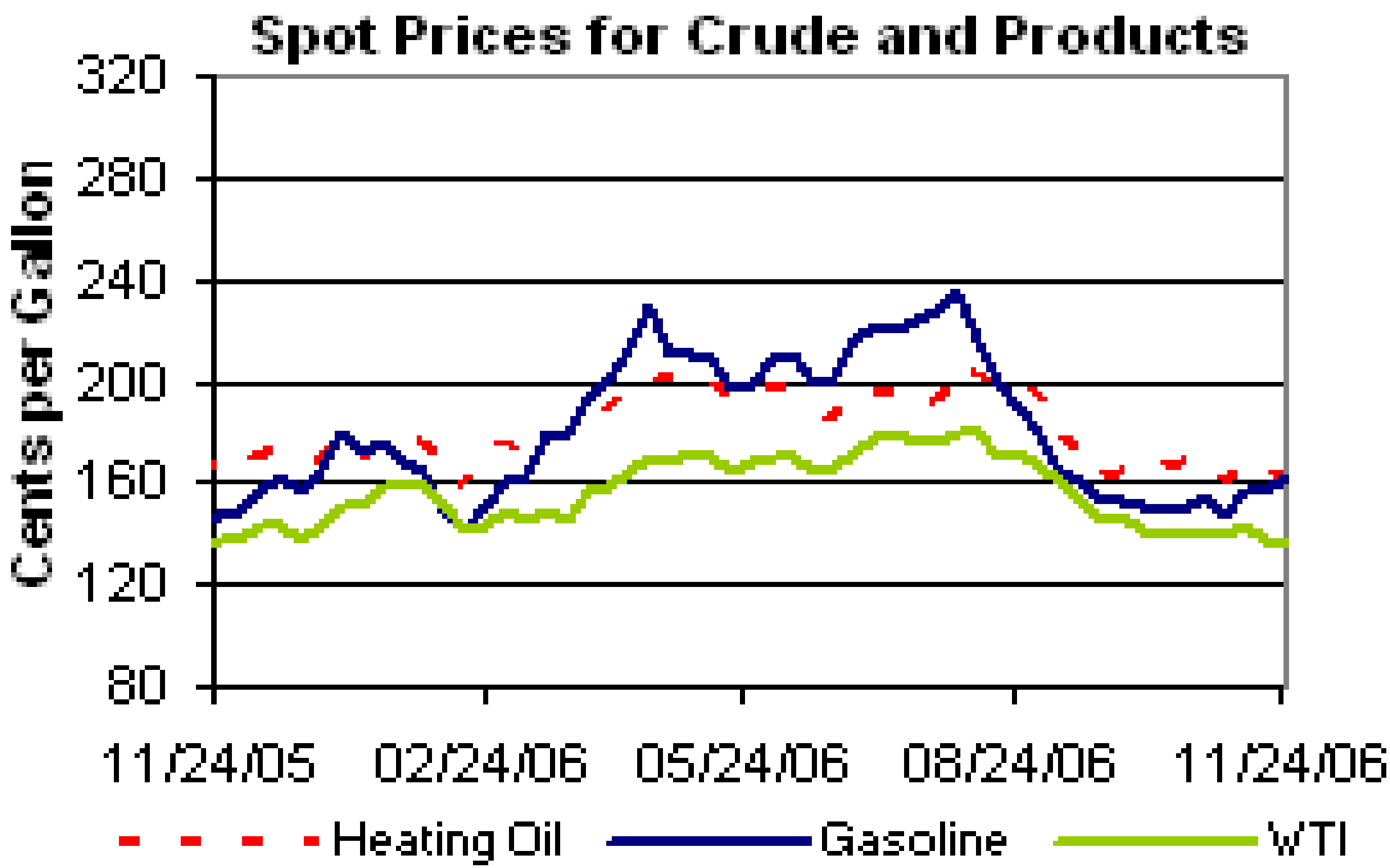
## State of the U.S. Economy: Positives

- After declining sharply in August, consumer confidence increased in September
- Oil and gasoline prices dropped sharply late in the quarter
  - Slower economic growth and demand, a tame hurricane season and the U.N. wavering on Iran were all contributors




- Unemployment rate remains at historical lows: dropped to 4.4% in October
  - Jobless rate in 2006 has ranged from 4.4% to 4.8%
  - Initial jobless rates declined for the quarter
  - Accelerating wage growth appears to be dampening any negative impact on personal consumption
- Corporate profits were robust, and M&A activity increased
- Globally, economic activity appears to be solid

# Sharp Decline in Energy Prices
## Estimated Impact Is Equal to a $100bn Tax Cut



# Sharp Decline in Energy Prices
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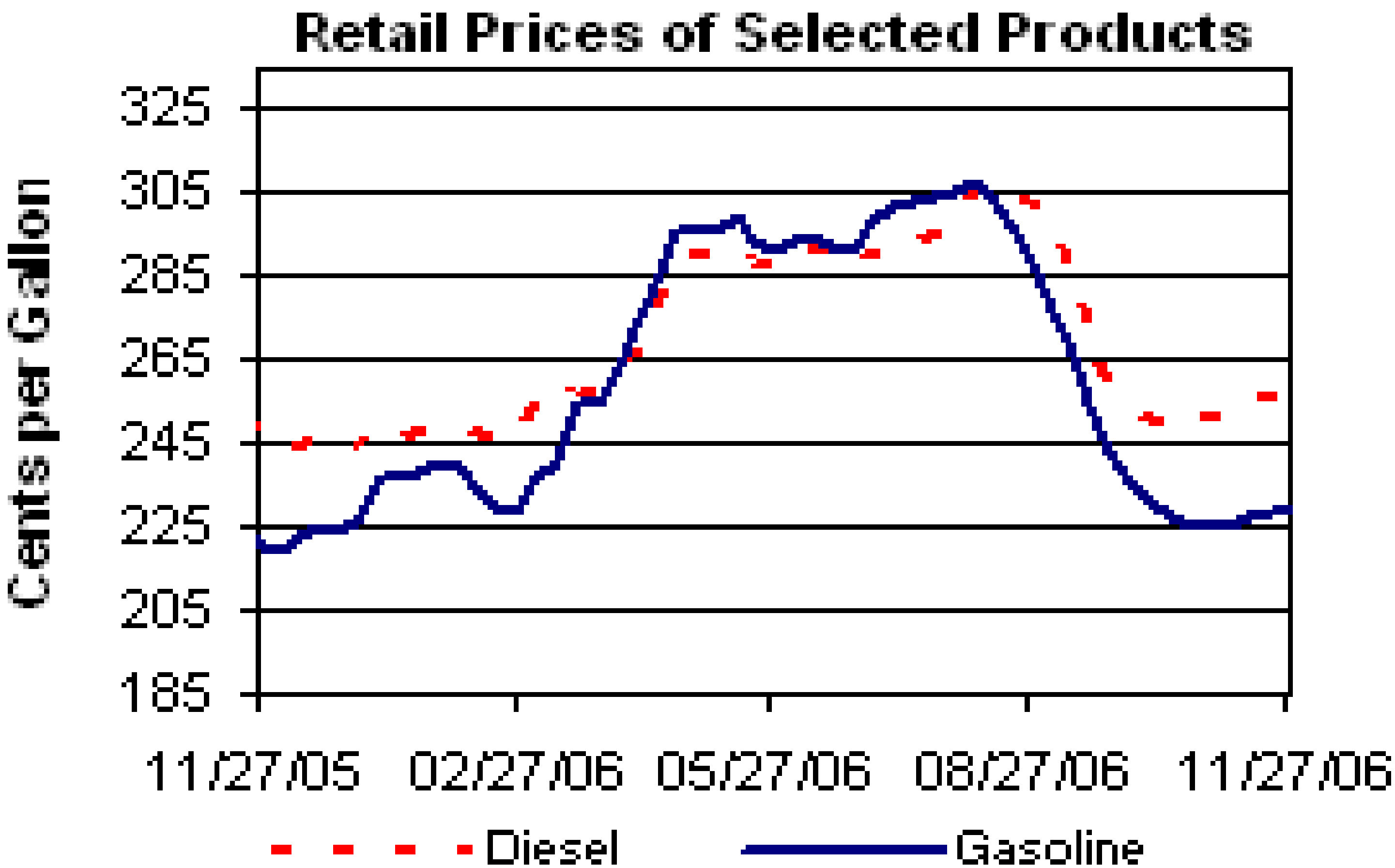
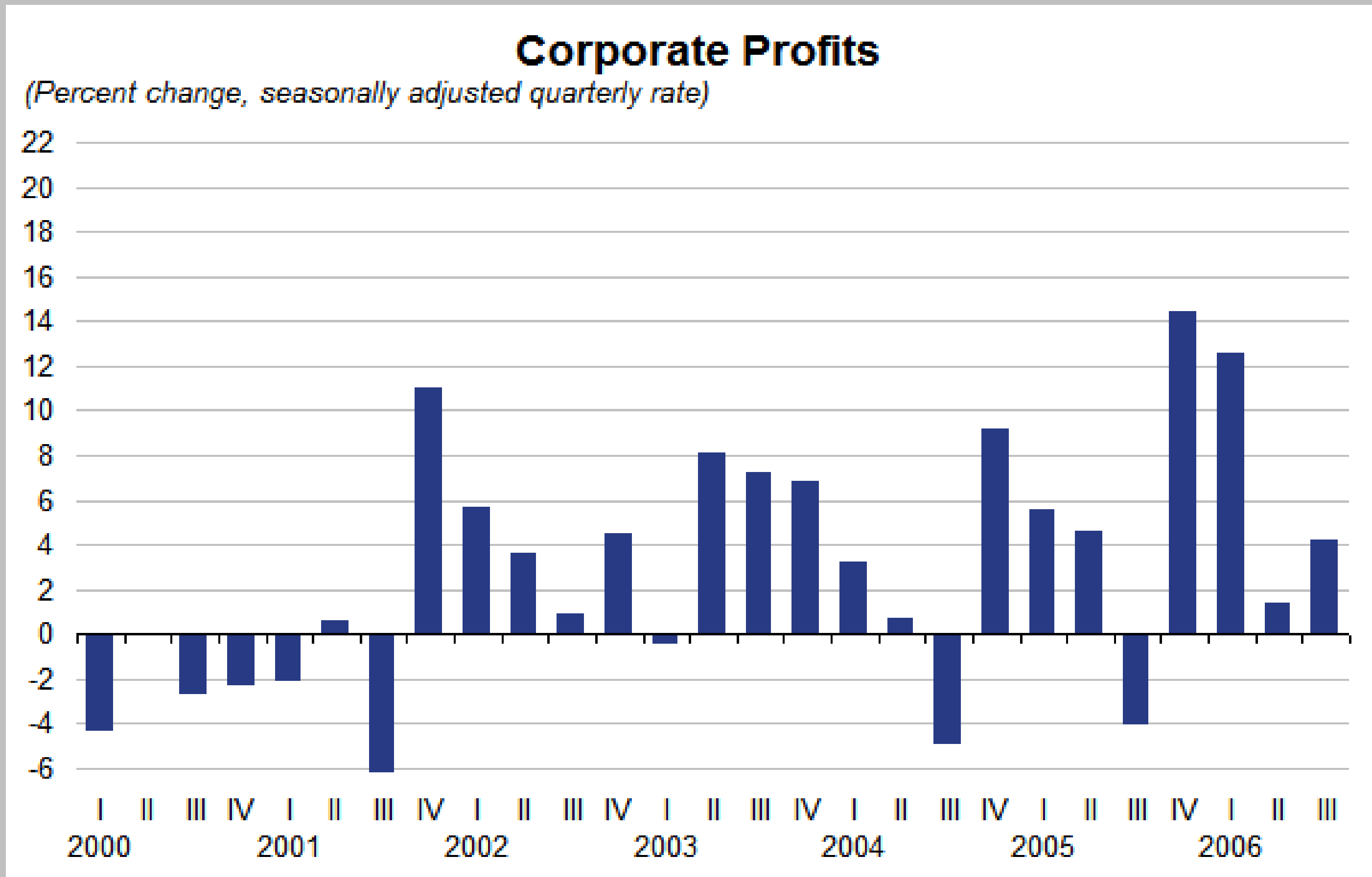


# Unemployment Continues to Decline
# Indicating Economy Is Still Showing Strength

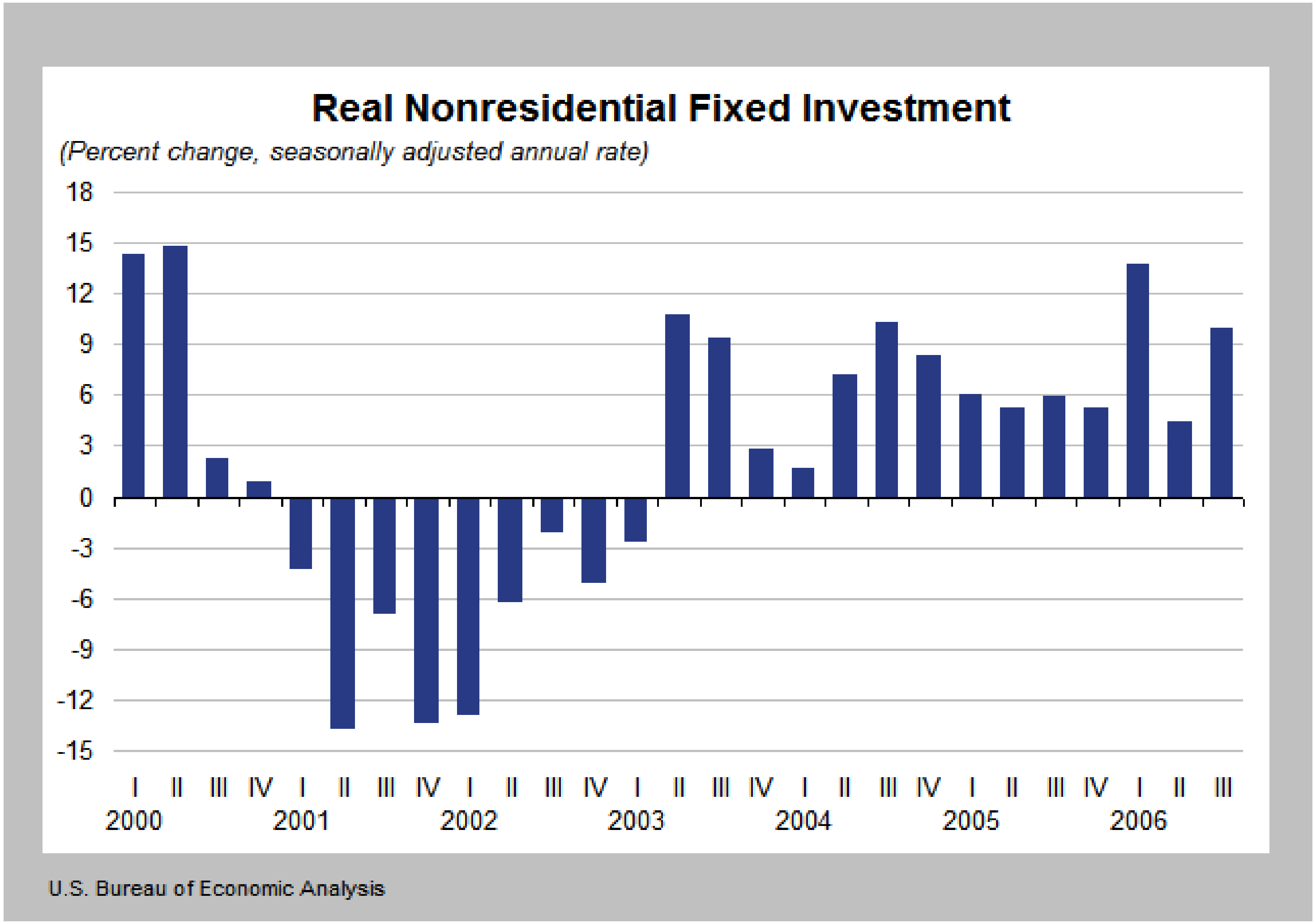

Note: Cross-hatched area represents recession.

# Corporate Profitability Continues to Rebound




U.S. Bureau of Economic Analysis

# Sectors Other than Housing Continue Strong

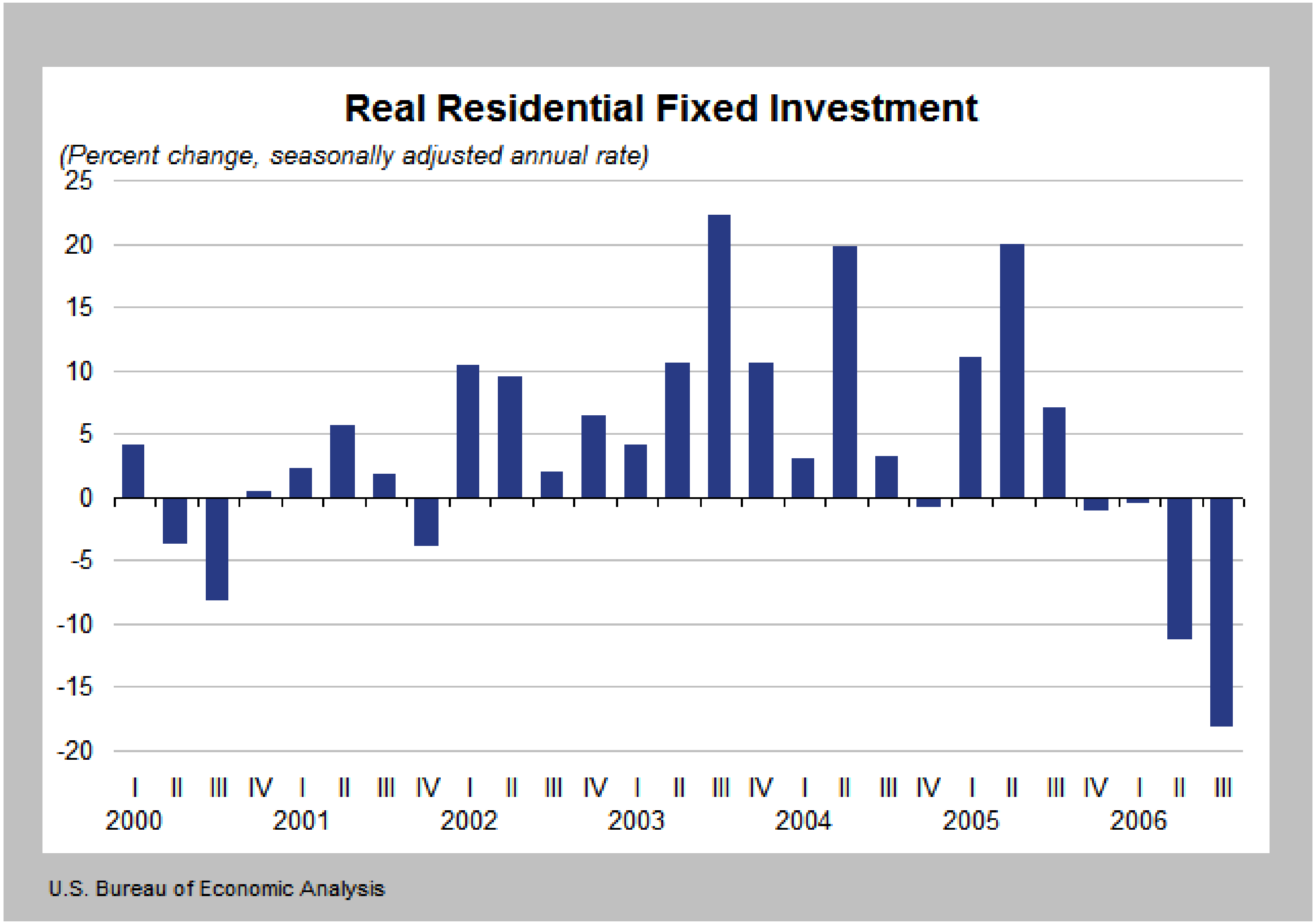


# Growth Continues to Slow
# Future Direction Depends on Balance of Conflicting Forces

## State of the U.S. Economy: Negatives

- Reality is that “soft landings” are forecast far more than they occur
- Investors had difficulty making sense of economic data despite the strong gains in the equity and fixed income markets
- It was clear that the U.S. economy was moderating:
  - Impact of short-term interest rates
  - Natural maturing of the business cycle
  - Cooling housing market
  - Lag effect of the rise in energy prices
- Significant slowing in the U.S. housing market and indications of a turn in the domestic growth story brought a rally in rates and increased volatility to the markets
- Euro and yen were weak against the U.S. dollar, placing pressure on export activity

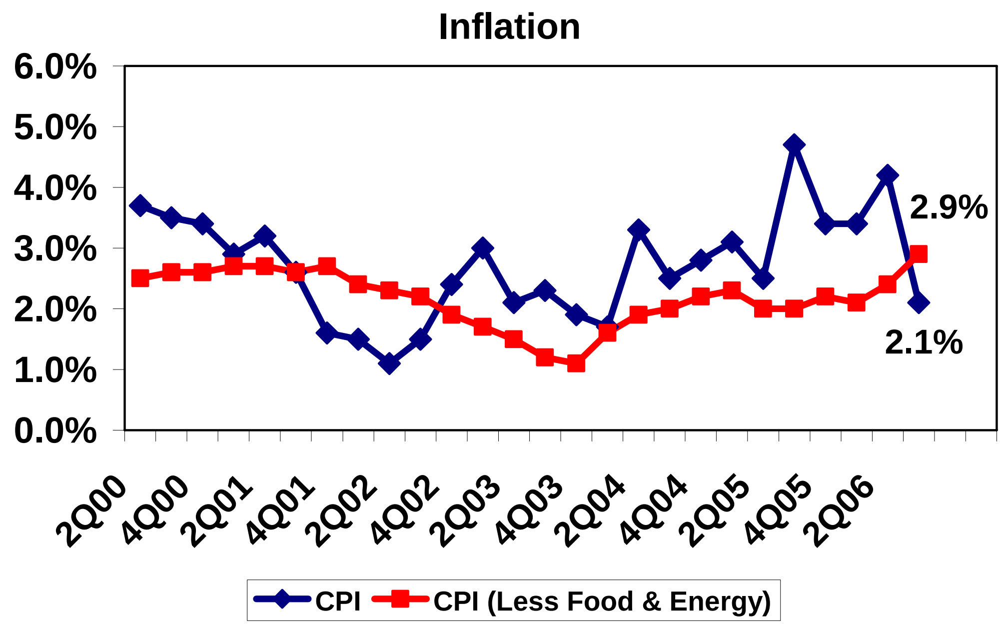
# Very Steep Decline in Housing Activity



# Growth Continues to Slow
# Future Direction Depends on Balance of Conflicting Forces

## State of the U.S. Economy: Fed Watch & Interest Rates

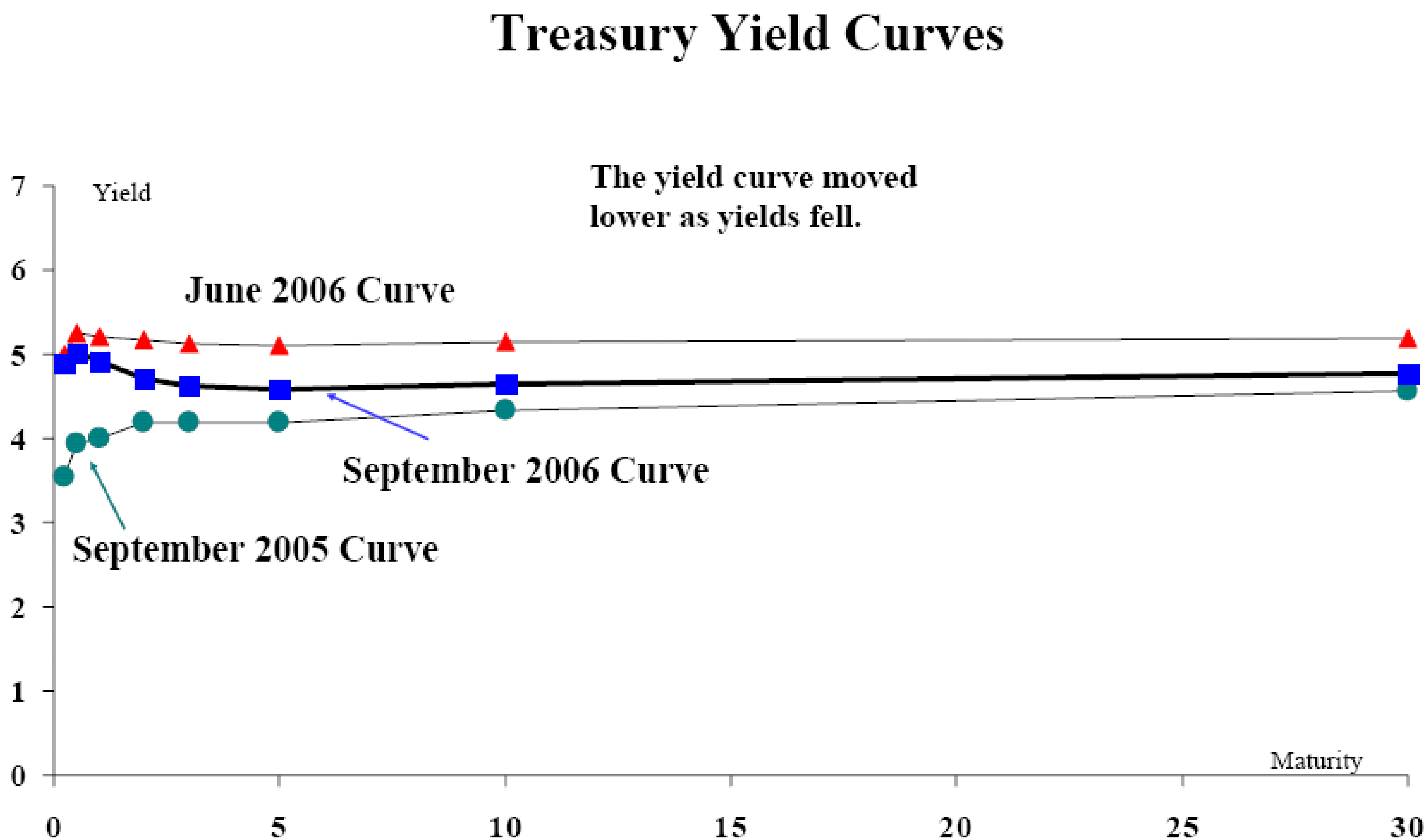
- After 17 consecutive rate increases, the Fed held rates steady throughout the quarter; Fed Funds rate currently stands at 5.25%
  - Inflationary expectations were contained within the Fed's comfort zone
  - Tightening will resume only if either inflationary expectations deteriorate or growth re-accelerates
  - Tone of incoming economic data suggests that further tightening is unlikely in the short term
- The Consumer Price Index declined sharply due to a notable decline in energy- and transportation-related prices
- However, Core CPI (less food and energy) continued to rise
  - Pressure on food and beverages and medical care
  - Upside risks appear to be limited




**Source:** U.S. Department of Labor Bureau of Labor Statistics. All Urban Consumers. Year-over-year. Seasonally Adjusted.

# Yields Fell, Particularly in the Intermediate Segment of the Curve

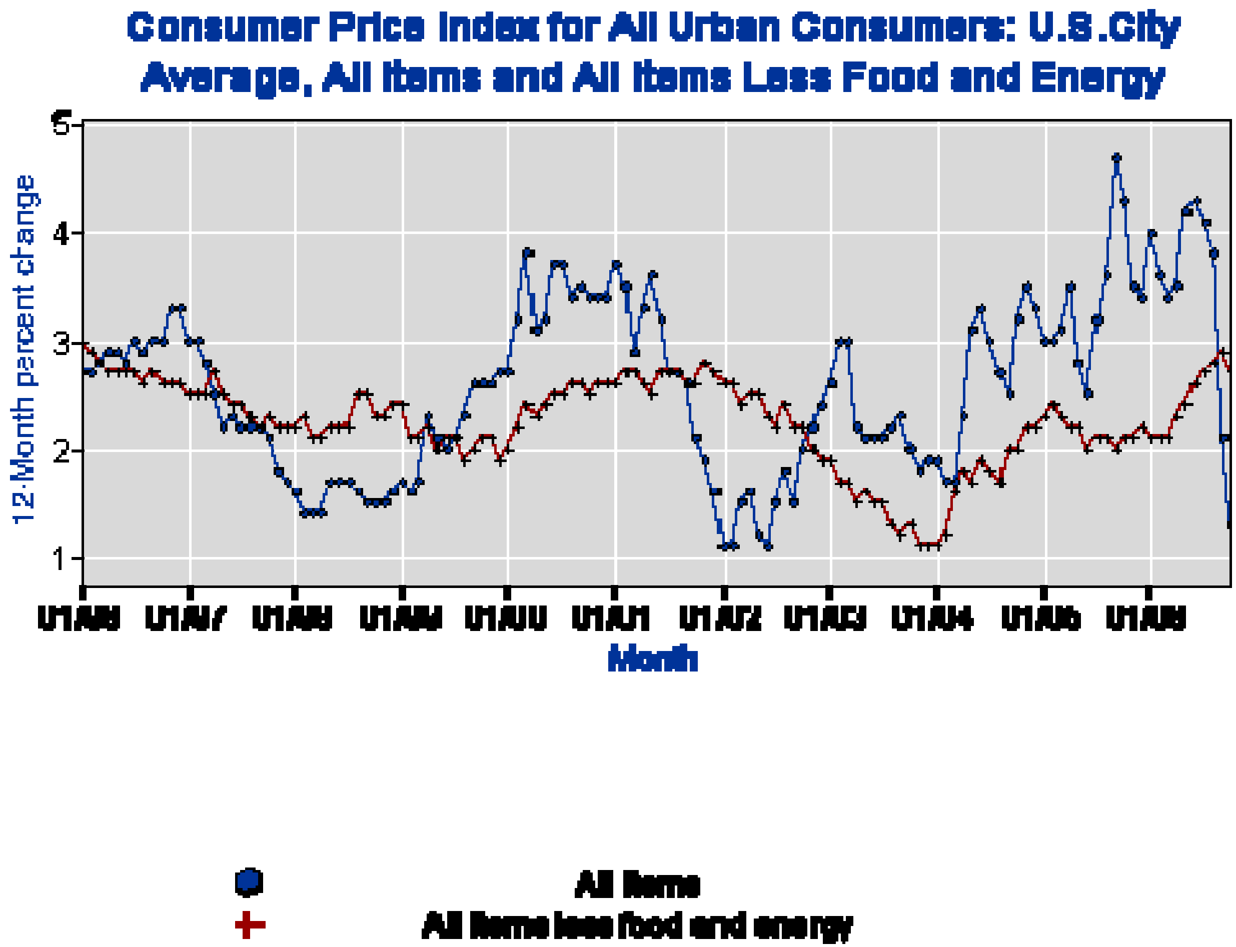
## Capital Markets: Fixed Income Market



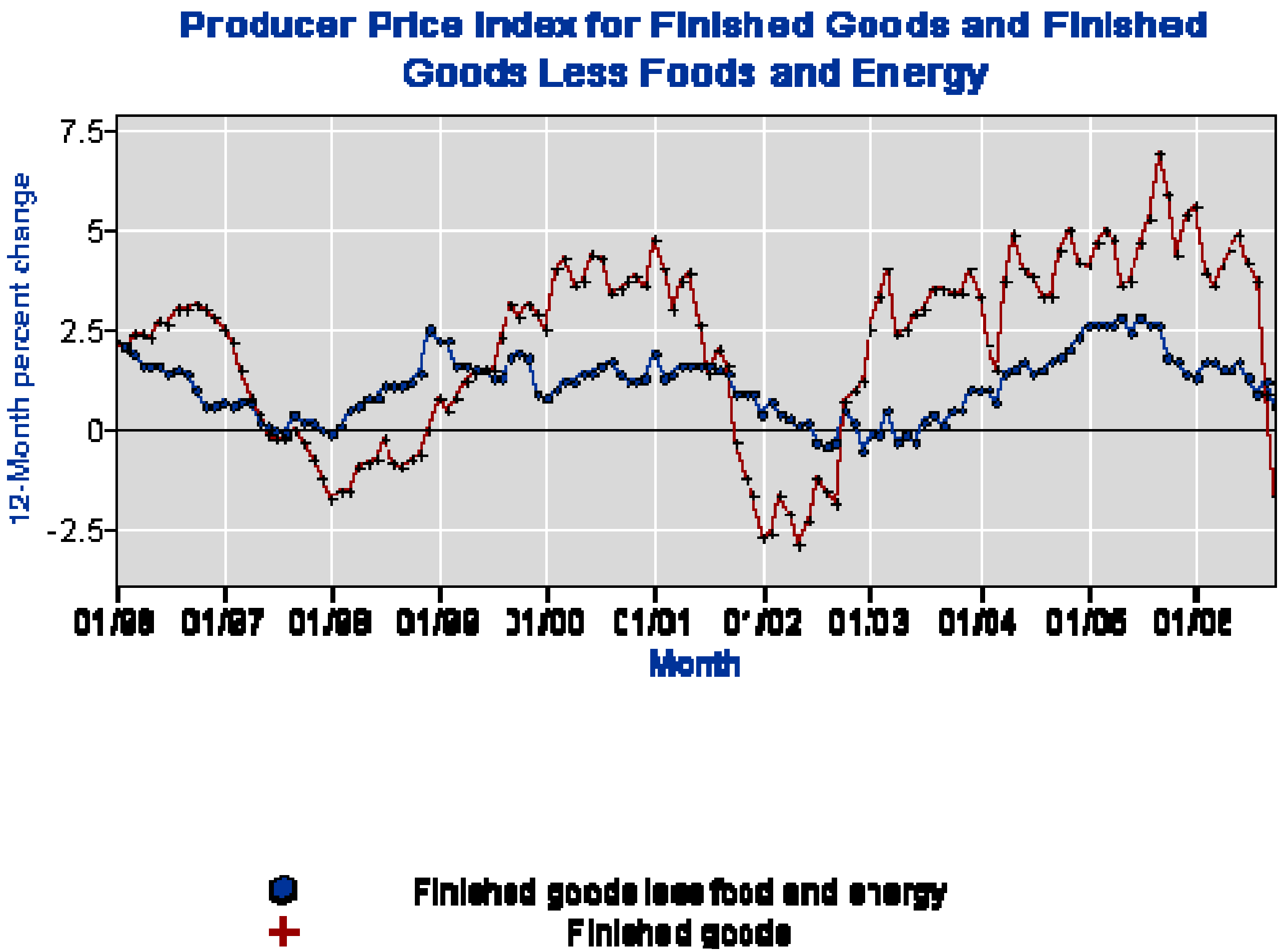



**Source**: Datastream

# Consumer Core Inflation Is Trending Up
Even with a Steep Decline in Energy



# Producer Price Inflation Picture Looks Better



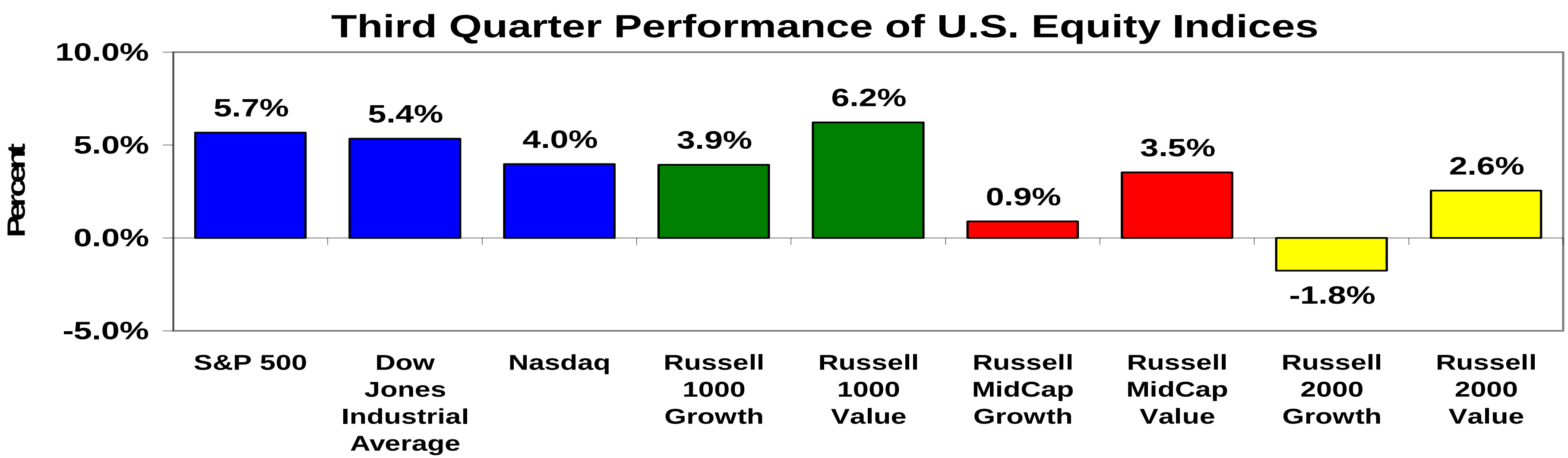
# Wage Costs are Creeping Upward
## Benefit Costs Growing at a Much Lower Rate

# Securities Markets

# U.S. Equity Markets
# Markets Rebounded Strongly in the Third Quarter

## Capital Markets: U.S. Equity Market

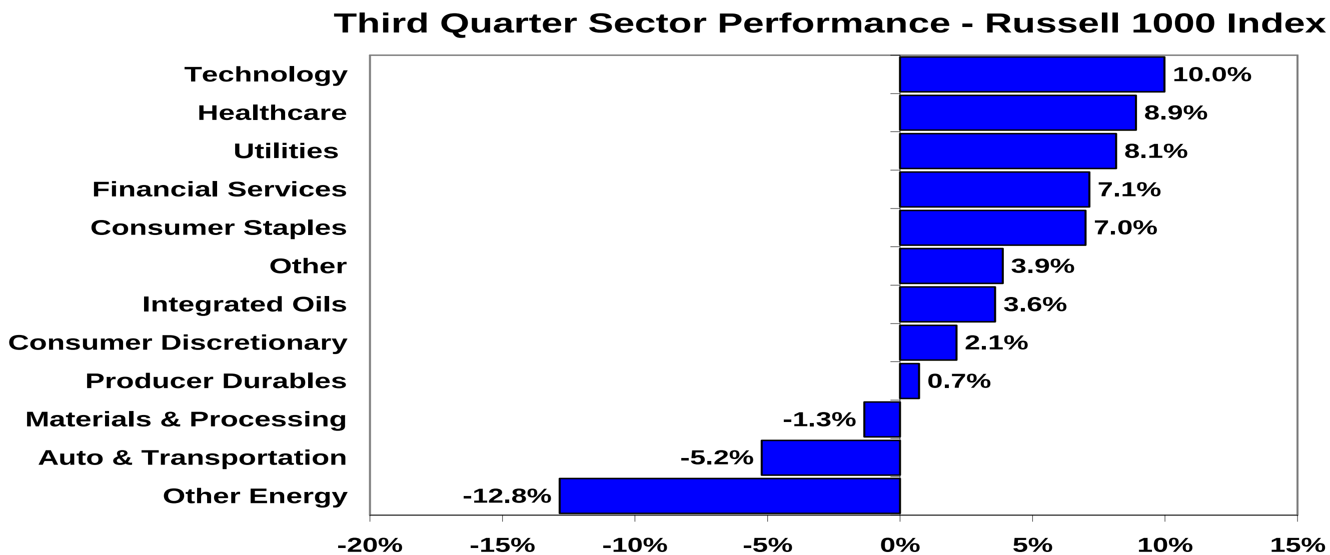
- Long-awaited pause in the Fed's monetary policy and a drop in oil and gas prices caused U.S. equity markets to rebound
- Large caps outperformed mid- and small-cap stocks for the 2nd consecutive quarter
- Value also outperformed growth across all market caps; however, there appears to be some evidence of growth investing gaining ground, particularly in September



# Traditional Growth Sectors Led the Market
## Technology and Health care

### Capital Markets: U.S. Large Cap Equity Market

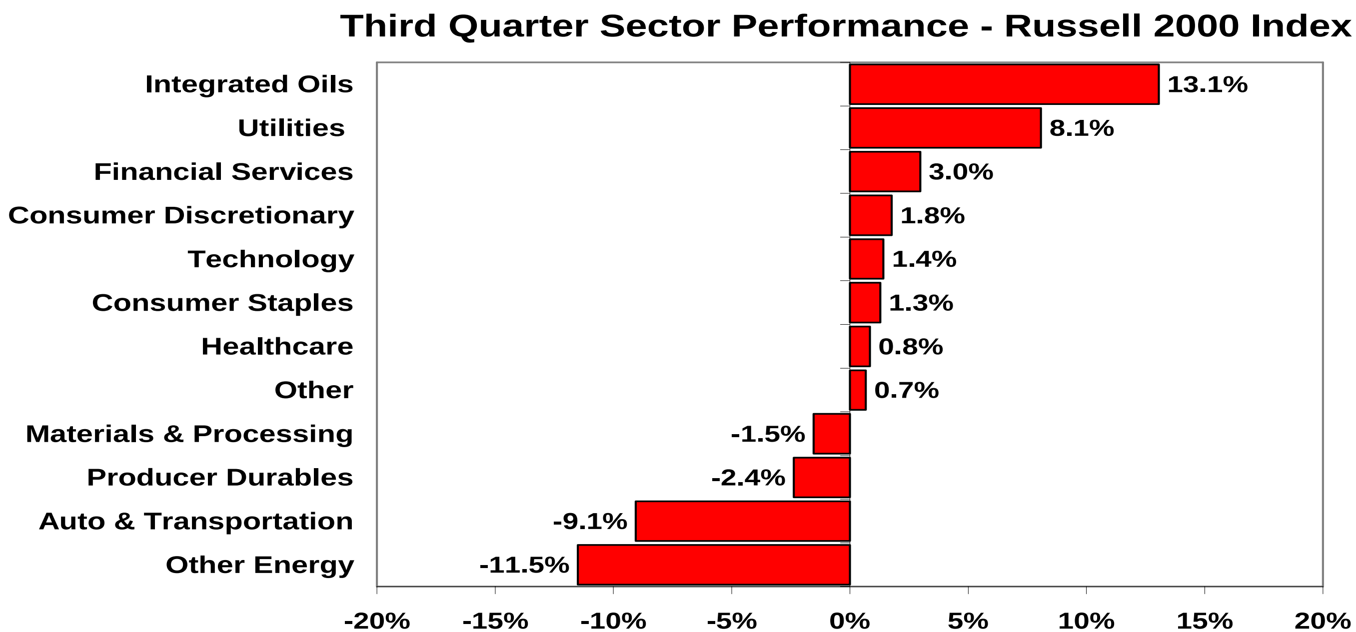
- Macro factors influenced stock prices and sector performance for the quarter
- Witnessed a defensive rally, with the major exception of technology stocks
- Technology, health care and utilities (telecom) sectors all benefited from strong M&A activity while financial services rallied on the pause in the Fed tightening
- Other energy declined sharply due to profit-taking and the drop in energy prices



# Sector Performance Is Different for Small-Cap

## Capital Markets: U.S. Small Cap Equity Market

- Fears of a slowdown placed pressure on small cap stocks
- Earnings and M&As in the sparsely populated integrated oils sector supported strong gains early in quarter despite the September drop in energy prices
- As with large cap stocks, defensive sectors produced the best returns



# Large Cap Assumes Market Leadership

- Large Cap Value was very strong
- Small Growth was the only sector with negative returns

| 3Q2006 | Growth | Core | Value |
|---|---|---|---|
| **Large** | 3.94 | 5.06 | 6.23 |
| **Mid** | 0.89 | 2.11 | 3.53 |
| **Small** | -1.76 | 0.44 | 2.55 |
| | | | |
| Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value | | | |

# One-Year Returns Are Very Strong

- Core and Value are significantly ahead of current long-term expectations
- Strongest performance for growth this century

| 1-Year Returns | Growth | Core | Value |
|---|---|---|---|
| **Large** | 6.05 | 10.27 | 14.62 |
| **Mid** | 7.05 | 9.58 | 12.28 |
| **Small** | 5.86 | 9.91 | 13.99 |
| | | | |
| Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value | | | |

# Three-Year Results Are Strong

- Returns for all asset classes except large growth are well above long-term expectations
- Large Growth has been weak since 2000 and the end of the dot-com era, but is showing signs of strength

| 3-Year Returns | Growth | Core | Value |
|---|---|---|---|
| Large | 8.36 | 12.79 | 17.25 |
| Mid | 14.53 | 18.22 | 21.15 |
| Small | 11.79 | 15.46 | 19.02 |
| | | | |
| Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value | | | |

# Cumulative 3-Year Results Are Generally Strong

- Returns for all but large growth are excellent; recovery continues to be strong
- Value returns were exceptional

| Cumulative 3-Yr | Growth | Core | Value |
|---|---|---|---|
| **Large** | 27.24 | 43.49 | 61.19 |
| **Mid** | 50.23 | 65.22 | 77.82 |
| **Small** | 39.70 | 53.92 | 68.60 |
| | | | |
| Note: Russell 1000, Mid-Cap, 2000 Indices: Value, Core, Growth | | | |

# Five-Year Results Still Show Wide Variations

- Large Growth is making a comeback
- Value, particularly small/mid value, is superior to other styles

| 5-Year Returns | Growth | Core | Value |
|---|---|---|---|
| **Large** | 4.43 | 7.65 | 10.73 |
| **Mid** | 12.02 | 14.81 | 16.62 |
| **Small** | 10.15 | 13.78 | 16.97 |
| | | | |
| Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value | | | |

# Cumulative 5-Year Results Are Extremely Different, Depending on Market Segment

- Huge spread between growth and value
- Small and mid-value more than doubled

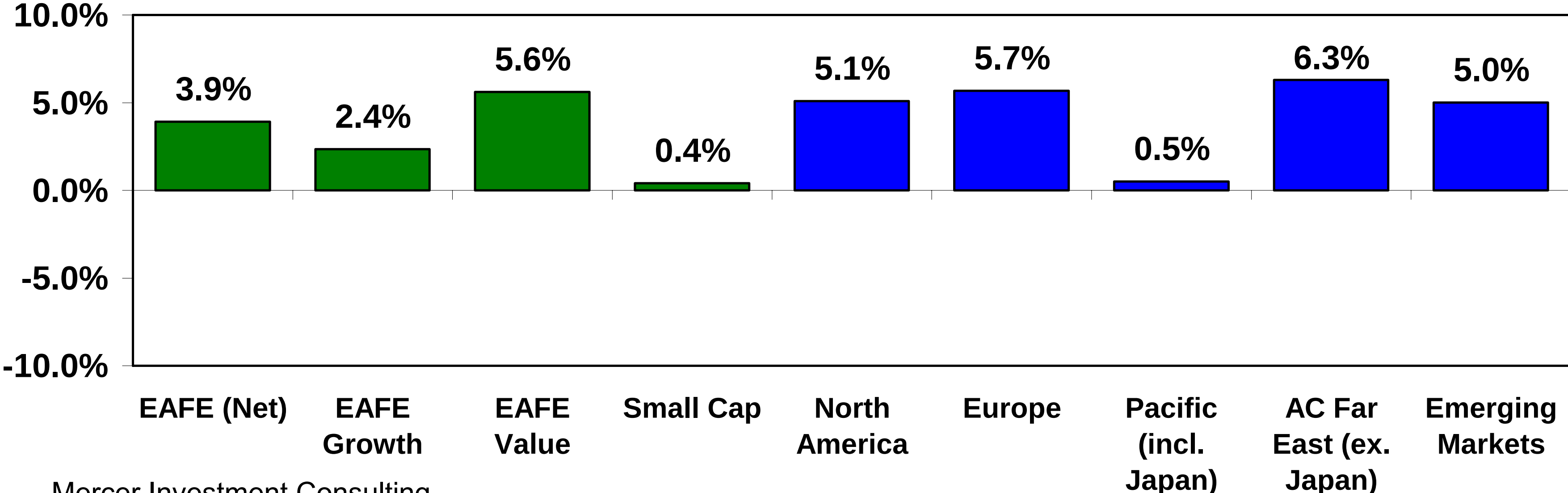
| Cumulative 5-Yr | Growth | Core | Value |
|---|---|---|---|
| **Large** | 24.20 | 44.57 | 66.47 |
| **Mid** | 76.39 | 99.48 | 115.71 |
| **Small** | 62.15 | 90.69 | 118.96 |
| | | | |
| Note: Russell 1000, Mid-Cap, 2000 Indices: Value, Core, Growth | | | |

# Non-U.S. Equity Markets
# EAFE Generated a Positive Return, Even with Strong Dollar

## Capital Markets: Non-U.S. Equity Markets

- Non-U.S. equity markets were generally positive for the quarter, but a rising U.S. dollar dampened results
- Continental Europe continued to produced strong returns, in part due to the strength of financial service firms and easing oil and commodity prices
- Japanese stocks rebounded but were negative in U.S. dollar terms
- Emerging markets also rebounded, but small cap stocks lagged

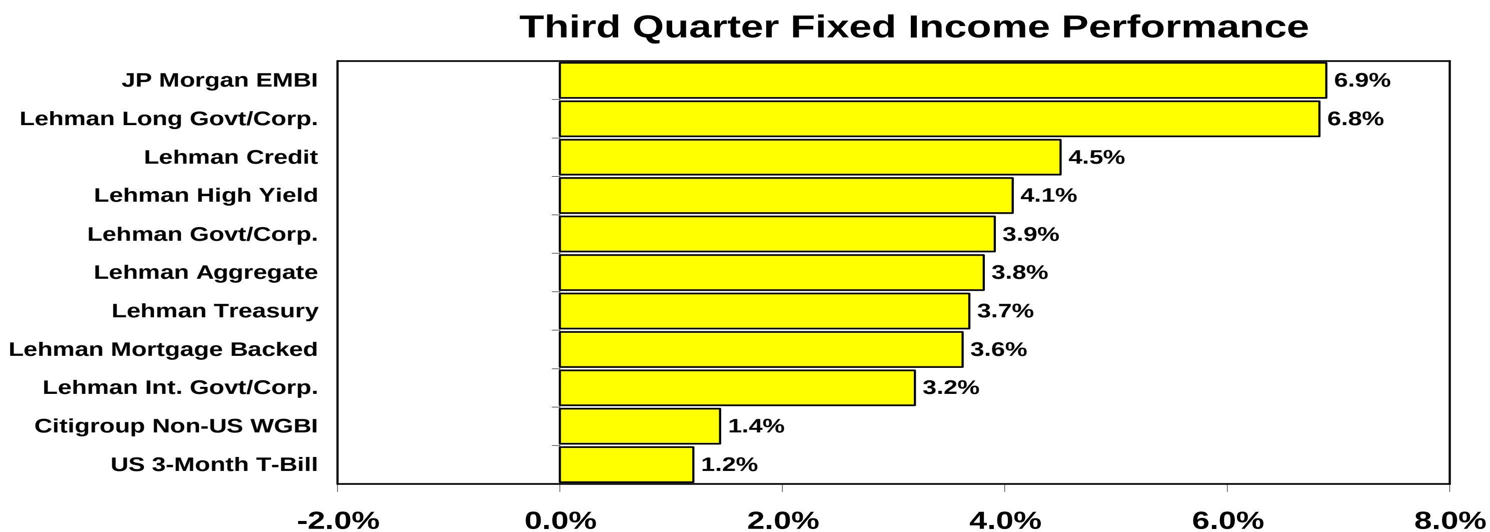
### Third Quarter Non-US Equity Performance



# Fixed Income Markets
## Bond Returns Very Strong As Weak Economy Portends Falling Rates

### Capital Markets: Fixed Income Market

- Weaker economic data caused investors to bid up bond prices and push rates lower; Aggregate Bond Index produced its best quarterly results since 3Q02
- Credits were among the best performers during the quarter, rebounding from some of the weakness witnessed in the second quarter; in general, lower-quality and long-term maturity issues offered the best results
- Emerging market bonds rebounded



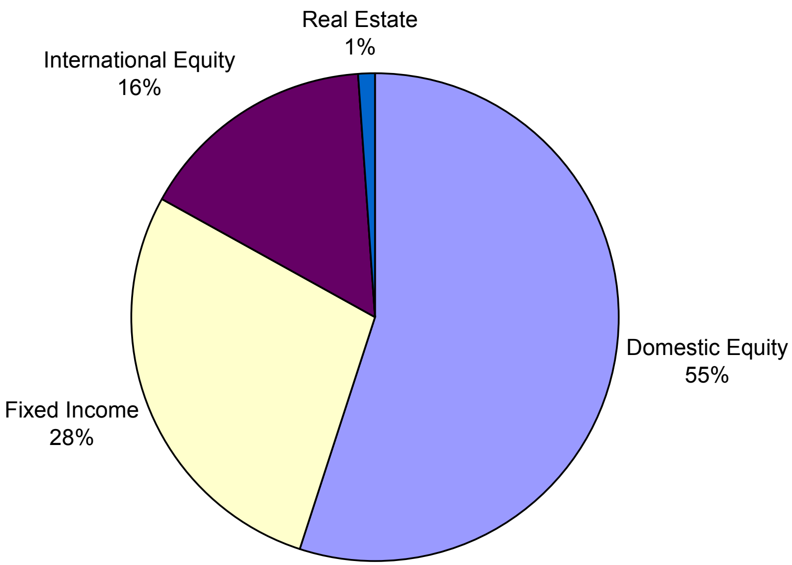
# Other Asset Classes

- **High Yield Bonds**
  - The Lehman Brothers High Yield Bond Index, up 4.1%, posted its highest quarterly return since the fourth quarter of 2004. Overall, yields fell 41 basis points and spreads widened to an average 348 basis points
  - Long-term corporate bonds were up 6.4%, outperforming intermediate-term issues, which gained 3.7%. By quality, Ba-rated bonds were the best performers, followed by Caa-rated issues
- **Real Estate**
  - The equity real estate market surged ahead during the quarter as the FTSE NAREIT Index rose 9.3%
  - The latest data available for the private real estate market showed a second quarter gain of 4.0% for the NCREIF Property Index

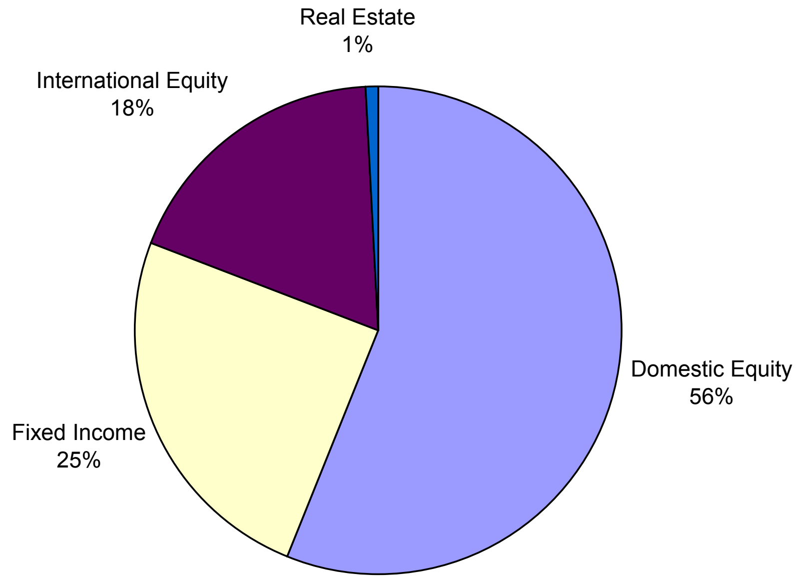
# ASRS Total Fund Performance

# Total Fund Asset Allocation
## September 30, 2006

**Policy Adjusted for Transition into Real Estate**

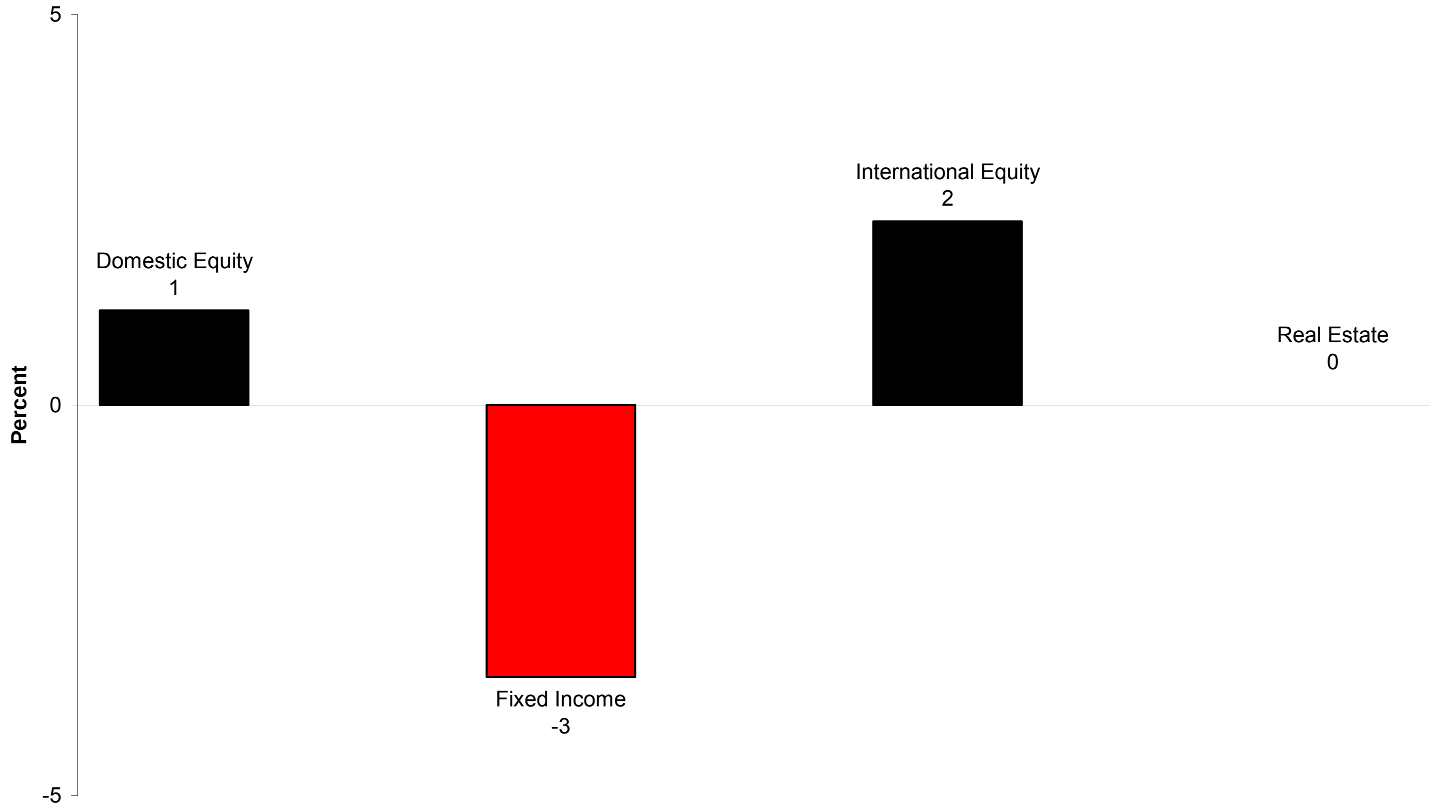



**Actual Asset Allocation**



# Total Fund Asset Allocation
## September 30, 2006

**Actual Asset Allocation vs. Policy Adjusted for Transition into Real Estate**



# Total Fund Performance
## For Periods Ending September 30, 2006

| | Quarter | 1 Year | 3 Years | 5 Years | 10 Years | Inception |
|---|---|---|---|---|---|---|
| **Total Fund** | 3.9% | 10.1% | 12.0% | 8.6% | 8.9% | 10.9% |
| **Benchmark*** | 4.9 | 10.2 | 11.4 | 7.9 | 7.7 | 10.7 |
| **Excess Return** | –1.0 | –0.1 | 0.6 | 0.7 | 1.2 | 0.2 |

* Interim Benchmark: 55% S&P 500, 28% LB Aggregate, 16% MSCI EAFE/ACW ex. US[1], and 1% NCREIF+100 bps.
Note: Interim Benchmark incorporates a proration of 5% real estate.

Policy History:
- 7/1/75-12/31/79 – 40% S&P 500/60% LB Aggregate
- 1/1/80-12/31/83 – 50% S&P 500/50% LB Aggregate
- 1/1/84-12/31/91 – 60% S&P 500/40% LB Aggregate
- 1/1/92-12/31/94 – 50% S&P 500/40% LB Aggregate/10% EAFE
- 1/1/95-6/30/97 – 45% S&P 500/40% LB Aggregate/15% EAFE
- 7/1/97-12/31/99 – 50% S&P 500/35% LB Aggregate/15% EAFE
- 1/1/00-9/30/03 – 53% S&P 500/30% LB Aggregate/17% EAFE
- 10/1/03-present – 53% S&P 500/26% LB Aggregate/15% MSCI EAFE/ACW ex. US[1]/6% NCREIF+100 bps.

(1) MSCI EAFE/ACW ex. US Benchmark is the MSCI EAFE prior to 10/1/05 and the MSCI ACW ex. US thereafter.

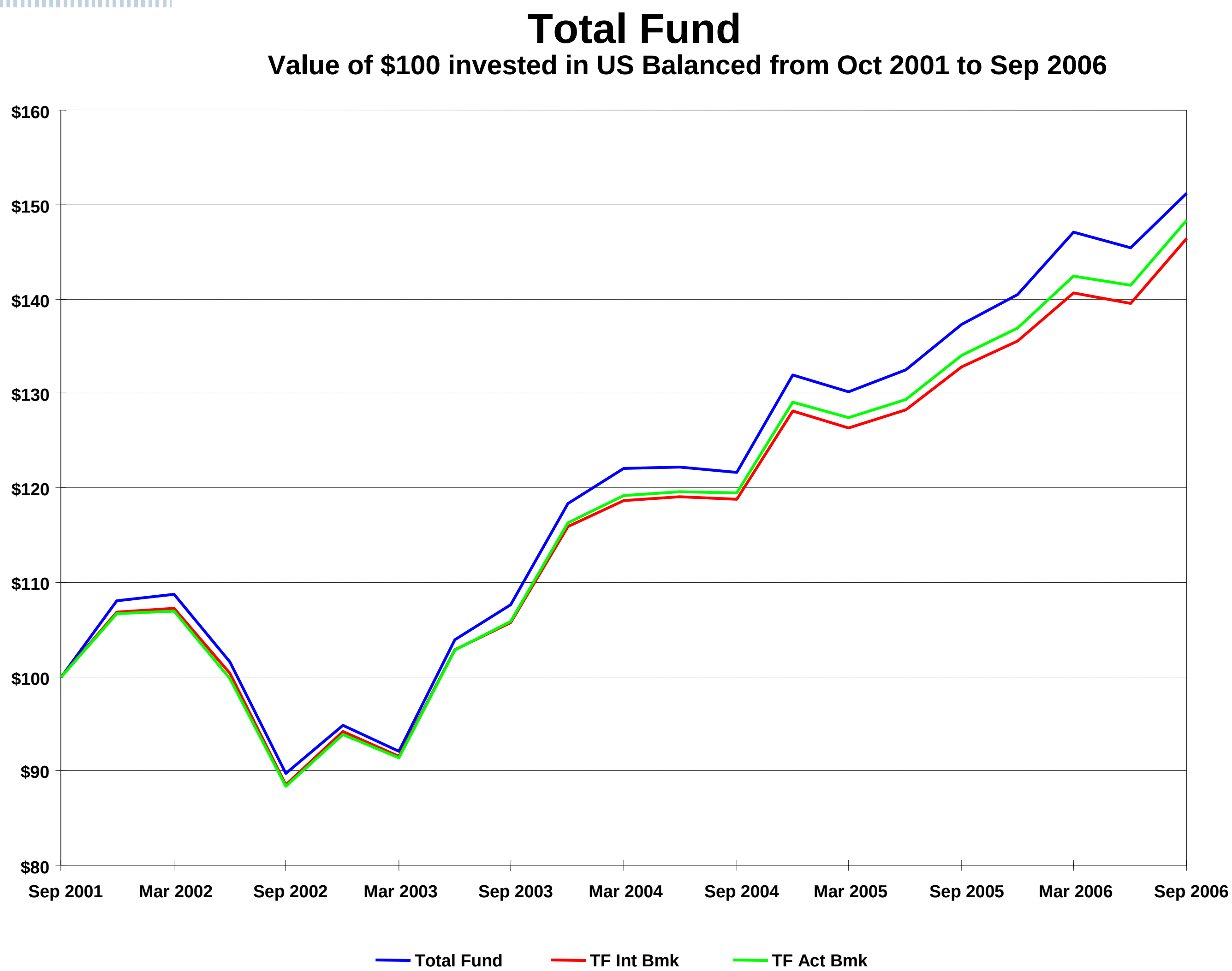
# Total Fund Performance
# For Periods Ending September 30, 2006

| | | 1 Year | 3 Years | 5 Years | 10 Years | Inception |
|---|---|---|---|---|---|---|
| | **ASRS Total Fund** | 10.1% | 12.0% | 8.6% | 8.9% | 10.9% |
| 1) | Actuarial Assumption | 8.0% | 8.0% | 8.0% | 8.0% | 7.6% |
| | Excess Return | 2.1% | 4.0% | 0.6% | 0.9% | 3.3% |
| 2) | Asset Allocation Target | 7.4% | 7.4% | 7.8% | 8.3% | N/A |
| | Excess Return | 2.7% | 4.6% | 0.8% | 0.6% | N/A |
| 3) | CPI Inflation + 3.75% | 5.8% | 6.8% | 6.4% | 6.3% | 8.1% |
| | Wage Inflation + 3.75% | 7.6% | 6.3% | 7.1% | 6.7% | 8.1% |
| | Excess Return - CPI | 4.3% | 5.2% | 2.2% | 2.6% | 2.8% |
| | Excess Return - Wage | 2.5% | 5.7% | 1.5% | 2.2% | 2.8% |

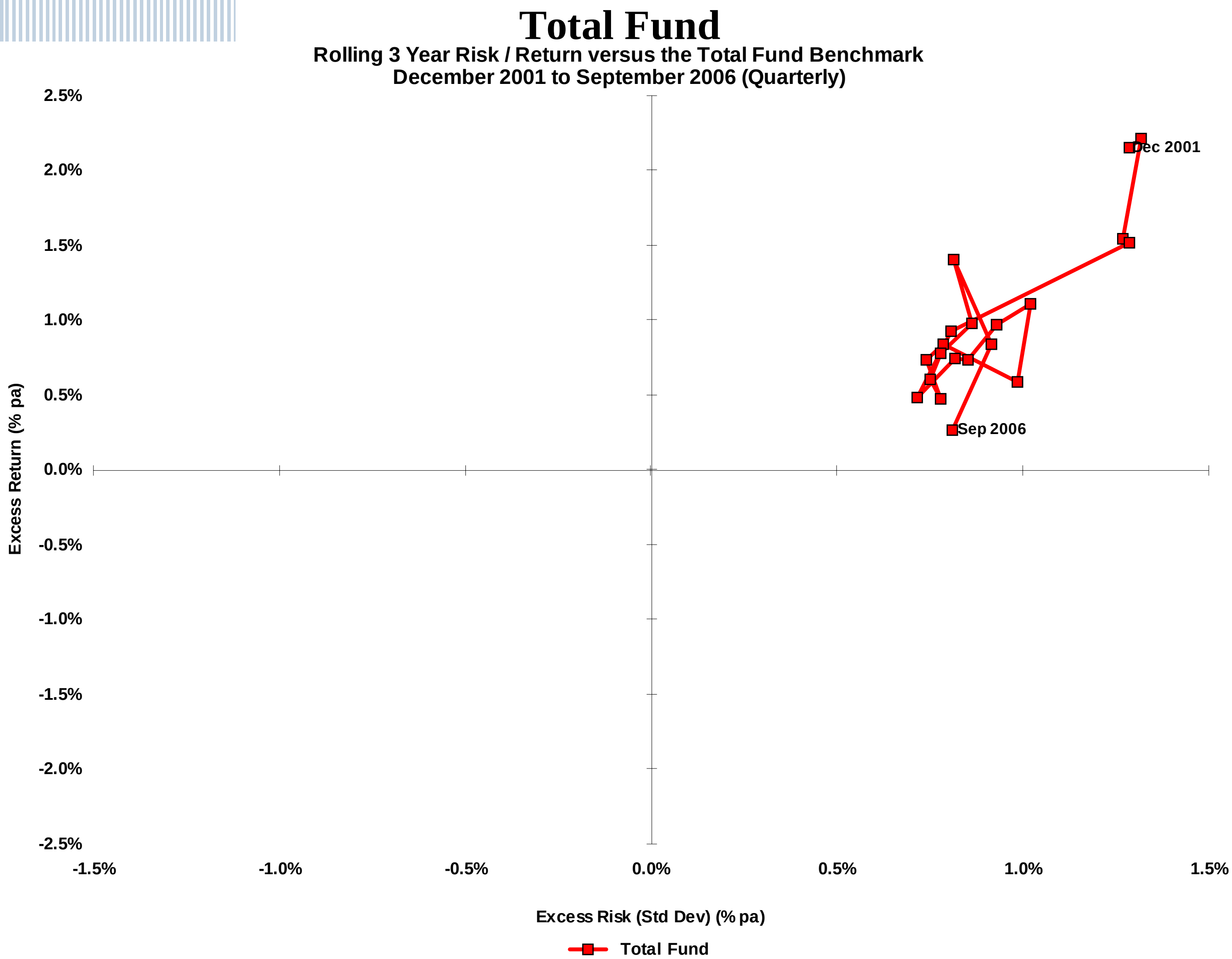
# Supplemental Comparison Information
## For Periods Ending September 30, 2006

| | 1 Year | 3 Years | 5 Years | 10 Years | 15 Years |
|---|---|---|---|---|---|
| **Russell/Mellon Trust Universes** | | | | | |
| Master Trust Funds - Total Funds | 42 | 53 | 63 | 48 | 47 |
| Total Funds - Public | 58 | 75 | 86 | 49 | 32 |
| Total Funds Billion Dollar - Public | 61 | 85 | 87 | 59 | 43 |
| Total Funds - Corporate | 40 | 49 | 58 | 44 | 49 |
| **Wilshire Trust Universe Comparison Service** | | | | | |
| Master Trusts - All | 27 | 31 | 41 | 47 | 44 |
| Public Funds | 35 | 36 | 44 | 40 | 26 |
| Public Funds Greater than $1.0 Billion | 54 | 59 | 66 | 55 | 34 |
| Corporate | 29 | 35 | 46 | 58 | 56 |
| **Callan Associates Inc.** | | | | | |
| Total Funds | 54 | 52 | 63 | 50 | 41 |
| Public Funds | 54 | 49 | 60 | 44 | 26 |
| Public Funds - Large (>1B) | 86 | 77 | 79 | 56 | 27 |
| Corporate Funds | 49 | 43 | 58 | 50 | 41 |

# Total Fund Growth



# Risk/Return Analysis



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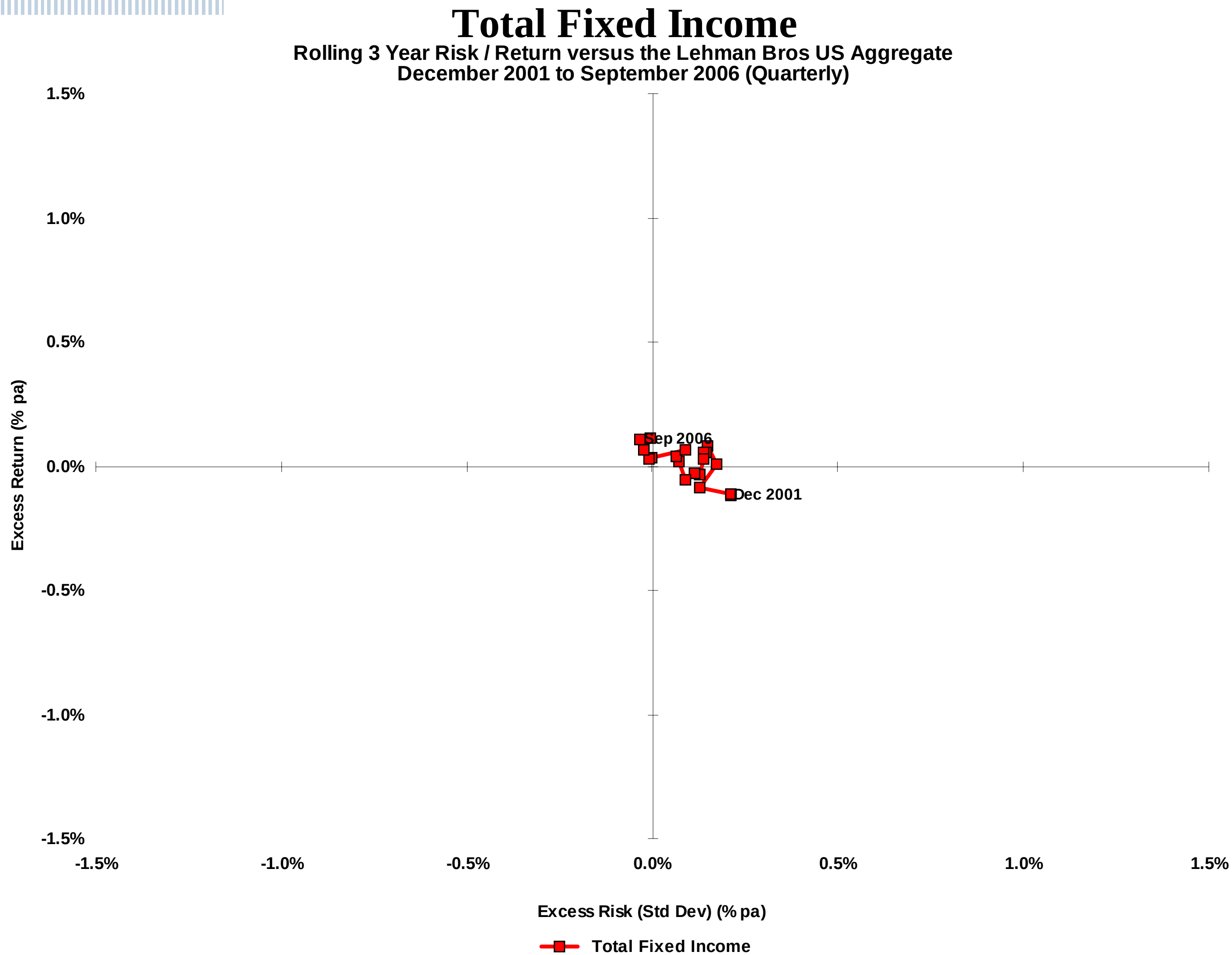

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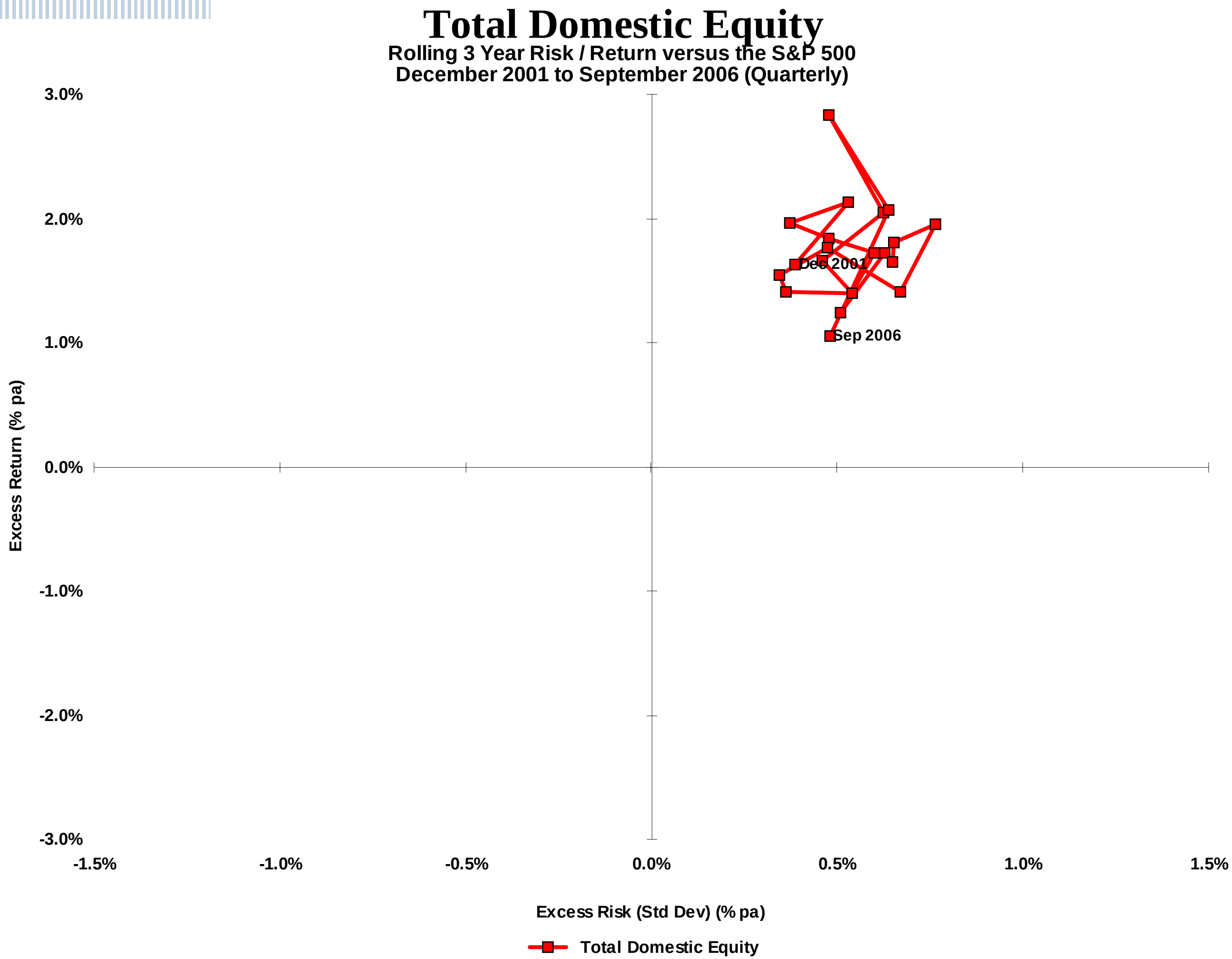

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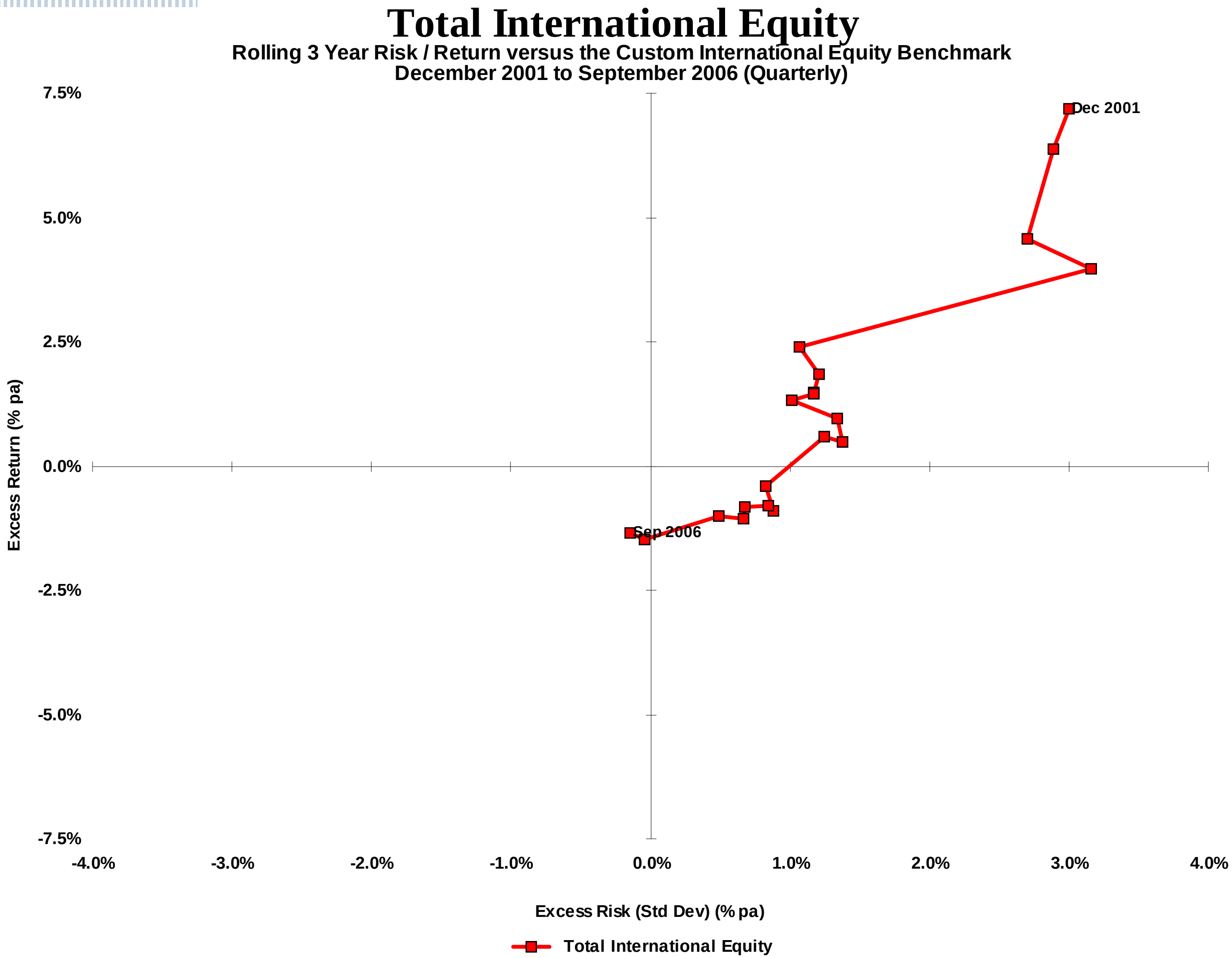

# Performance vs. Benchmarks
# For the 3 Years Ending September 30, 2006

| | Return | Assumed ROR | Std. Dev. |
|---|---|---|---|
| Total Fund | 12.0% | 7.4% | 7.1% |
| Benchmark* | 11.4 | | 6.7 |
| Domestic Fixed | 3.5 | 4.5 | 3.8 |
| LB Aggregate | 3.4 | | 3.8 |
| Domestic Equity | 13.4 | 8.5 | 9.2 |
| S&P 500 | 12.3 | | 8.7 |
| Intl. Equity | 21.3 | 8.5 | 12.4 |
| Custom Bmk | 22.7 | | 12.6 |
| Real Estate | N/A | -- | N/A |

* Interim Benchmark: 55% S&P 500, 28% LB Aggregate, 16% MSCI EAFE/ACW ex. US, and 1% NCREIF+100 bps.

Note: Interim Benchmark incorporates a proration of 5% real estate.

# Performance vs. Benchmarks
## For the 5 Years Ending September 30, 2006

| | Return | Assumed ROR | Std. Dev. |
|---|---|---|---|
| Total Fund | 8.6% | 7.8% | 11.3% |
| Benchmark* | 7.9 | | 10.9 |
| Domestic Fixed | 4.9 | 4.9 | 3.7 |
| LB Aggregate | 4.8 | | 3.7 |
| Domestic Equity | 8.3 | 8.9 | 16.0 |
| S&P 500 | 7.0 | | 15.6 |
| Intl. Equity | 14.3 | 9.1 | 18.3 |
| Custom Bmk | 14.6 | | 17.7 |
| Real Estate | N/A | -- | N/A |

* Interim Benchmark: 55% S&P 500, 28% LB Aggregate, 16% MSCI EAFE/ACW ex. US, and 1% NCREIF+100 bps.

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